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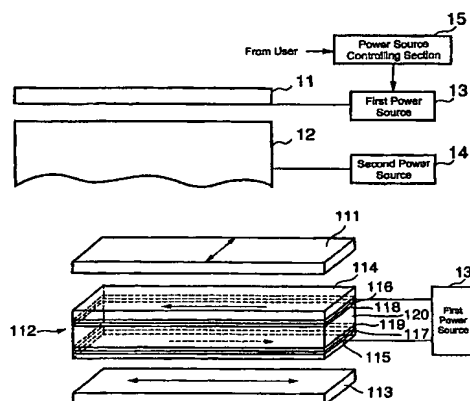
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(54) Title: DISPLAY APPARATUS AND VIEWING ANGLE CONTROLLING UNIT



(57) Abstract: In the case that a voltage is not applied to a viewing angle controlling unit (11), a polarized plate (113) passes only the light vibrating in an arrow direction of the light entered into the viewing angle controlling unit (11). The light passed the polarized plate (113) passes through a liquid crystal layer (120) without twisting. The light passed the liquid crystal layer (120) also passes through a polarized plate (111). Therefore, the display becomes transparent (white) in any viewing angle (in all direction) in viewing angle non-controlling mode. In the case that a voltage is applied to a viewing angle controlling unit (11) by a first power source (13), a polarized plate (113) passes only the light vibrating in an arrow direction of the light entered into the viewing angle controlling unit (11). The light passed the polarized plate (113) passes through a liquid crystal layer (120) along liquid crystal molecules. The light passed the liquid crystal layer (120) also passes through a polarized plate (111). Therefore, the display becomes transparent in the center of the viewing angle controlling unit (11). The display becomes black in the side region of the viewing angle controlling unit (11) because of having a predetermined angle between an optical axis of the polarized plate (111) and an axis direction of the liquid crystal molecules. In viewing angle controlling mode, the display is visible when viewed from the front, while the display is invisible when viewed in a slanting direction.

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